



Where the Satellite-based navigation system accuracies are getting inhibited?

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YouTube Live Link:

<https://youtube.com/live/FAnp8n2SmWo?feature=share>

Mr. Tanneeru Venkateswara Rao is working in the Balloon Facility of Tata Institute of Fundamental Research (TIFR) since 2000. Currently, he is a Scientific Officer. His responsibilities include designing and developing on-board and ground-based telemetry sub-systems and satellite-based navigation sub-systems. He has received the ME, M. Tech degree in digital systems engineering from the Department of Electronics and Communication Engineering, Osmania University, Hyderabad, Telangana, India, in 2015. At present, he is pursuing a doctoral degree from Koneru Lakshmaiah Education Foundation, Vaddeswaram, Andhra Pradesh, India, in the field of ionospheric studies. His research interests include Global Positioning System (GPS) amplitude scintillations correlation analysis, scintillations prediction, and mitigation algorithms to improve positional accuracy during scintillations periods.

The satellite-based navigation system was proposed and implemented to provide centimetre level positional accuracy to the users. But the positional accuracy of the satellite-based navigation system is deteriorating due to the atmospheric influence on trans-radio communication signals and various errors such as ephemeris, ionospheric delays, and receiver clock errors. Several concepts were suggested to overcome the errors and to improve positional accuracy. In this talk, the speaker will touch upon some of the techniques such as differential global positioning system (DGPS), global navigation satellite system (GNSS), and augmentation to improve positional accuracy. And also, he will discuss the scope of research work to minimize the errors and the counteractive measures to overcome the atmospheric influence on positional accuracy.